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E911

KING COUNTY

REGIONAL

311 FEASIBILITY

STUDY



PREPARED BY

KING COUNTY ENHANCED 911 PROGRAM OFFICE

SEPTEMBER 12, 1997

KING COUNTY REGIONAL 311 FEASIBILITY STUDY

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EXECUTIVE SUMMARY

KING COUNTY REGIONAL 311 FEASIBILITY STUDY

PURPOSE

Throughout the nation, a concern has developed that 911 systems are overburdened and in crisis due to the public's overuse of this important emergency access system. As a result, in February, 1997, the Federal Communications Commission (FCC) reserved 311 nationwide for use by communities for non-emergency police telephone calls and to give access to other government services. The reservation of 311 for non-emergency calls has generated interest throughout the nation, including within King County.

As a result, in May, 1997, the E-911 Program Office initiated a study to determine the feasibility of implementing a 311 system in King County. This report presents the results of this work.

STUDY PROCESS

All of the cities, the police departments, the fire departments, the Medic One programs, and the Public Safety Answering Points (PSAPs) have been included in the study and have been given the opportunity to provide input into the results of the study. Information on the current E-911 system, system statistics, PSAP profiles, and the PSAPs' definitions of service, were provided to each of these participating agencies.

In addition, perceived problems with the existing approach of using 911 for emergencies and seven-digit telephone numbers for non-emergencies were discussed, and possible alternatives that could be used to address the perceived problems were presented. These alternatives included the answering of police, fire, EMS, and general government non-emergency calls on 911, seven-digit numbers, or various 311 system options.

Each agency was asked to complete a survey indicating their level of preference for the various alternatives. The survey responses were then analyzed to determine the overall preference among the various agencies for where and how non-emergency calls should be answered.

PERCEIVED PROBLEMS THAT 311 COULD POTENTIALLY RESOLVE

The following are the perceived problems with the system of 911 for emergencies and seven-digit telephone numbers for non-emergencies that were addressed in this study. Each issue is presented first, followed by a discussion of the research that was conducted in the study to determine the relevance of this concern in King County.

- A. *There is a perception that 911 call volumes in King County are continually increasing at greater rates than would be expected with the population growth. There is concern that due to this growth, the future 911 call volume will exceed the 911 system network, equipment, and staffing resources, causing delays in the handling of the 911 calls.*

Included in the report are King County's population and 911 call volumes for 1987 through 1997. This data was used to project population growth and 911 call volumes into the future. It became apparent that the relationship of 911 calls to population has not been stable over the past ten years, and as a result, a predictable trend of 911 call volumes based solely on population cannot be projected into the future. It appears that there has been a dramatic drop both in the calls per person and in the rate of change. However, it is anticipated that this decreasing rate of change is not sustainable. Using this assumption, a target has been established to maintain a level of 911 calls per person between 1.1 and 1.3 calls per person into the future. This target range was then used to project 911 call volumes through the year 2010. At this growth rate, 911 call volumes are not expected to reach the 1994-1996 level until after 2010.

As is noted in the report, the capacity of the E-911 system is continually monitored, and as the 911 call volume changes, the network, equipment, and staffing components of the system are adjusted to accommodate the demand. It is reasonable to assume that the 911 call volumes projected in this report will not exceed the overall capacity of the E-911 system.

- B. *Another perception is that too many non-emergency calls are made by the public to 911. Nationally, some anecdotal reports have estimated that up to 80% of 911 calls are for non-emergency requests. This is a local concern as well. These non-emergency calls tie up the 911 trunks and staff resources at the PSAPs, and may interfere with the ability of true emergency calls to receive the prompt assistance the 911 system was designed to deliver.*

In order to assess this situation in King County, the PSAPs hand tallied inappropriate 911 calls for a two week period, since these calls are not currently electronically tracked. Prior to tracking these calls, each PSAP was asked to develop their agency's definition of an inappropriate 911 call. In general, these definitions indicated that any 911 call that does not require a police, fire, or emergency medical response is an inappropriate 911 call. In addition to tracking these calls, the total 911 calls and total seven-digit calls, both of which are electronically tracked, were also recorded to allow for a comparison between the three statistics.

Countywide, these statistics show that only about 6% of the 911 calls in King County are inappropriate calls, according to each PSAP's own definition. This is far below the perceptions being made on both a local and a national level. There are a few jurisdictions in which the inappropriate 911 calls make up a much higher percentage of the total 911 calls, but in general, the percentage of these calls is consistently low. In addition, countywide, close to 50% of the total calls answered at the PSAPs are seven-digit calls. When removing the City of Seattle from the statistics, this statistic goes up to 62%. In addition to indicating that the citizens of King County do not abuse 911 by making inappropriate 911 calls, the statistics also show that half of the calls received at the PSAPs are seven-digit calls, which indicates that the public is responsibly making the decision to call seven-digit numbers when they need information or non-emergency assistance.

- C. *There is also a perception that the complexity of jurisdictional boundaries in King County makes it difficult for the public to know which seven-digit numbers to call for various government services. With 37 cities, 36 police departments, including those cities which contract with the King County Department of Public Safety for service, and 36 fire departments, it is difficult for citizens to know which agency they are located in when they need to call for information or non-emergency assistance. In addition, although some of the telephone companies list the seven-digit non-emergency telephone numbers for the police and fire departments on the front inside cover of the telephone directories, it may be too difficult and confusing for people to locate other seven-digit numbers in the blue and white pages of the directories. Due to this confusion about jurisdiction and the inability to locate telephone numbers, the public may call 911 as a last resort.*

In addition to the fact that half of the calls received at the PSAPs are seven-digit calls, the majority of the agencies who completed their surveys indicated that listing the non-emergency telephone numbers on the front inside cover of the telephone directories, and other general government telephone numbers in the blue and white pages of the directories, is highly effective. Some of the respondents commented that the non-emergency listing which appears on the front inside cover of the US West directories needs to be included in the telephone directories published by all of the telephone companies. In addition, comments indicated that work needs to be done to redesign the general government listings in the blue and white pages to make these numbers more easily identifiable.

- D. *Another concern is that many general government offices are only open to provide service Monday through Friday during business hours, and only answer their seven-digit telephone lines during these hours. Since these lines are not answered evenings, nights, and weekends, when people need service during these times, they may call 911 because it is the only number that is answered continuously, even when they know they do not have a police, fire, or medical emergency.*

want people to know which jurisdiction they are in. They want people to call a specific efforts. The police departments who were represented at these meetings agreed that they

not share the view that implementing a 311 system will enhance community policing

Meetings held as part of this study process that the police departments in King County do

It was very interesting to hear via the comments at the Regional 311 Informational

reserve 311 for this purpose.

The final assumption that was discussed in this report is the view that implementing a 311 system will enhance community policing efforts. In fact, it was the U.S. Department of Justice's Office of Community Oriented Policing Services that asked the FCC to

with the implementation of their 311 pilot project, the Baltimore Police Department also

began using a differential police response policy.

attributed to the high number of 911 calls. It is important to note that simultaneously

significantly impact on police resources in the City of Baltimore, but that impact was

police officers on 75% of their 911 calls in 1995. These dispatch policies had a

in which the caller requested assistance. Statistics show that this department dispatched

Baltimore Police Department had a policy of dispatching police officers on every 911 call

police officers. For example, prior to the implementation of their pilot 311 system, the

Other police departments around the country don't necessarily use selective dispatch

Department only dispatches police officers on 34 - 36% of their calls.

example, through the use of a differential police response policy, the Seattle Police

secondary operator, where the call is handled or a report is taken over the phone. As an

handled by the 911 call taker, or transferred to other more appropriate agencies or to a

are not dispatched on every 911 call. The 911 calls are screened, and most are either

911 calls for police departments have a differential police response policies. Police officers

independent of the numbers of 911 calls. All of the PSAPs in King County who answer

In actuality, the number of police responses and police response times are somewhat

Department of Justice to request the reservation of 311.

are due to the high number of multiple emergency events, delays in response times

responses, and that during peaks of multiple emergency events, delays in response times

There is also a perception that the number of 911 calls drives the number of police

accessible for non-emergency or business service on weekdays during the business hours.

day, seven days per week. The remaining one-third of the police departments are only

departments are accessible either by phone or at their department's offices 24 hours per

answered when fire personnel are in the station. Approximately two-thirds of the police

department business lines are forwarded to a fire station after hours, and these lines are

answered Monday through Friday during general business hours. Many of the fire

for most cities and fire departments, the offices are staffed and the phone lines are

their public phone lines are answered. In general, the responding agencies indicated that

the agencies that participated in the study regarding their business hours and the hours

In order to allow this perception to be analyzed, information was collected from each of

F.

The implementation of a 311 system was presented as another alternative for solving the perceived problems. One decision that would need to be made when considering this alternative is to determine which services would be accessible through 311. Should 311 provide access to non-emergency police services only, or should fire, EMS, and/or general government services also be accessible through 311? Agencies were asked to evaluate the appropriateness of using 311 to access each of these types of services.

Another option would be to modify the existing approach and allow the public to call 911 regarding the appropriate use of 911 and the seven-digit non-emergency telephone for information or non-emergency situations, and to disconnect public education efforts regarding the appropriate use of 911 and the seven-digit non-emergency telephone message of appropriate use of 911 and seven-digit non-emergency numbers. County-wide public education campaign would be undertaken to further expand the non-emergency seven-digit numbers for public safety agencies. In this alternative, a provider of public education material on the appropriate use of 911 to the local jurisdictions for their use in public education programs. Because the message is delivered at the local level, there has been no organized, county-wide effort to educate the public on the use of 911. An enhanced 911 public education program. Currently, the E-911 Program Office provides public education material on the appropriate use of 911 to the local jurisdictions for information or non-emergency assistance. Another alternative considered was to continue the current E-911 system and implement an enhanced 911 public education program. Currently, the E-911 Program Office

One alternative would be to continue the current system, with the public calling 911 in emergency situations and seven-digit numbers when they need non-emergency assistance or information. The capacity of the E-911 system would continue to be evaluated on a routine basis and network, equipment, and staffing would be adjusted to accommodate changes in call volumes. In addition, the current public education plan would also be continued.

The following are the possible alternatives which were discussed in this study that could be used to address the perceived problems noted above.

A. Possible Alternatives.

POSSIBLE ALTERNATIVES THAT COULD BE USED TO ADDRESS THE PERCEIVED PROBLEMS

Police agency when they need assistance. These departments feel that there is identity in a telephone number, and the public learns their telephone number and identifies their particular police department generic. Their citizens will no longer need to know which department serves them. Therefore, our police departments see 311 as being contrary to their community policing efforts. They want their citizens to be actively involved in the community policing process, and to know their local police department, the telephone numbers to access it by, and the police officers who provide the service.

The other alternative which was defined was 311 calls answered by an automated answering system with menu driven routing to the appropriate seven-digit telephone numbers. The cost of this system was estimated at \$2,080,388 for one-time installation costs, and \$1,921,333 in ongoing annual operating costs. This estimate does not include the staffing impact at the agencies which the 311 calls would be transferred to.

Although responding agencies did not indicate strong support for any of the 311 alternatives, the 311 Steering Committee selected two alternatives to be further defined so that cost estimates could be developed. The option where 311 calls are answered at PSAPs by separate 311 call takers was estimated at \$4,593,721 for one-time installation costs, and \$11,233,033 in ongoing annual operating costs.

C. 311 System Costs.

The second highest rated alternative was to have non-emergency calls go to 911. None of the 311 alternatives were highly rated. The percentage of agencies indicating a strong preference for 311 ranged from 16% for the 311 option where calls are answered at the PSAPs by separate 311 call takers, to 3% for the automated answering system with individual 311 options showed that 57 - 77% of the responding agencies indicated that none of these 311 alternatives met their agency's needs.

In analyzing the survey results, responses from police, fire/EMS, cities, and PSAPs were looked at separately and collectively. These four groups consistently responded in a similar manner, so they were discussed as one group in the report.

In analyzing the survey results, automated answering systems with menu driven routing to the seven-digit non-emergency telephone numbers. 86% of the responding agencies rated this alternative as their strongest preference. There were no agencies that indicated that this alternative did not meet their needs.

There are many models of 311 systems that could be implemented. The following models were considered in this study: 311 calls answered at PSAPs by 911 call takers; 311 calls answered at PSAPs by separate 311 call takers; 311 calls answered at a separate call centre; 311 calls answered at a local government agency; 311 calls answered by an automated answering system with information menus; and 311 calls answered by an automated answering system with local government agency; 311 calls answered by an PSAPs; 311 calls answered at a multiple 311 call centres that correspond to the existing call centre; 311 calls answered at a local government agency; 311 calls answered by an automated answering system with menu driven routing to the appropriate seven-digit telephone numbers.

B. Preferred Alternative Selected by Participating Agencies.

In analyzing the survey results, responses from police, fire/EMS, cities, and PSAPs were looked at separately and collectively. These four groups consistently responded in a similar manner, so they were discussed as one group in the report.

The survey ratings and several comments indicated that public education efforts on the appropriate use of 911 and seven-digit non-emergency numbers should be increased, and expanded to a county-wide campaign, including the use of the media. In addition, the survey comments indicated that the listing of all of the seven-digit non-emergency numbers that included on the front inside cover of all of the telephone directories and that more could be done to clarify the information presented on this page. The 311 Steering Committee recommends that efforts should be made to follow through on these recommendations.

In addition, the survey results indicated that there was not strong interest in the implementation of any type of 311 system by the police departments, fire/EMS departments, cities, or the PSAPs when these agencies were analyzed as groups. There was some interest indicated by individual agencies, and the 311 Steering Committee recommends that if any of these jurisdictions decide to proceed towards the implementation of a 311 system, they do so under some form of countywide agreement regarding the services which would be accessible through 311. In addition, the impacts of this decision on surrounding jurisdictions should be addressed in a regional forum, in advance of a decision to proceed.

In addition, the survey results indicated that there was not strong interest in the implementation of a 311 system by the police departments, fire/EMS departments, cities, or the PSAPs of any type of 311 system by the police departments, fire/EMS departments, cities, or the PSAPs when these agencies were analyzed as groups. These statistics are consistent with the 911 assessment of the cities, the police and fire departments, and the PSAPs, that the existing E-911 system, alone with the use of seven-digit non-emergency numbers, works well today.

It is the recommendation of the 311 Steering Committee that a 311 system should not be implemented in King County at this time. Research has shown that our E-911 system is currently overburdened with non-emergency calls, and that the public is responsibly using the system. Overall, only 6% of the 911 calls received at our PSAPs are inappropriate, and close to half of the total calls to the PSAPs are already received on the seven-digit non-emergency system. In addition, an analysis of 911 call volumes indicates that the rate of change in 911 numbers. In addition, an analysis of 911 call volumes indicates that the rate of change in 911 call volumes will grow at a manageable rate. These statistics are consistent with the 911 assessment of the cities, the police and fire departments, and the PSAPs, that the existing E-911 system, alone with the use of seven-digit non-emergency numbers, works well today.

RECOMMENDATIONS

D. 311 Implementation Regionally or by Individual Jurisdictions.

The Steering Committee also recommends that the E-911 Program Office continue to monitor the 311 evaluations being conducted by others throughout the nation to determine their impact on the feasibility of a 311 system in King County. As vendors work to develop 311 technology and make this service available, it is also recommended that the E-911 Program Office monitor these services to determine their viability and report their findings on a periodic basis to the Regional Policy Committee.

INTRODUCTION

- Throughout the nation, a concern has developed that 911 systems are overburdened and in crisis due to the public's overuse of this important emergency access system. In response to this concern, in August, 1996, the U.S. Department of Justice's Office of Community Oriented Policing Services asked the Federal Communications Commission (FCC) that an N11 code, specifically 311, be reserved on a national basis for use by communities for non-emergency calls. FCC approved this request and reserved 311 nationwide for this purpose. (The pertinent portions of the FCC ruling are included in this report as Appendix A.)
- The reservation of 311 for non-emergency calls has generated interest throughout the nation. Several communities are investigating the feasibility of implementing 311 systems, and some, including Baltimore, Dallas, and San Jose, have or are preparing to install various configurations of 311 systems.
- There has also been interest in a 311 system generated within King County, and as a result, in May, 1997, the E-911 Program Office initiated a study to determine the feasibility of implementing a 311 system in King County. All of the cities, the police departments, the fire departments, the Medic One programs, and the Public Safety Answering Points (PSAPs) have been included in the study and have been given the opportunity to provide input into the results of the study.
- The following is the report that presents the results of the 311 feasibility study. The report is organized according to the elements of the Scope of Work for this study (Appendix B).
- A. There is a perception that 911 call volumes in King County are continually increasing at greater rates than would be expected with the population growth. There is concern that due to this growth, the future 911 call volume will exceed the 911 system network, equipment, and staffing resources, causing delays in the handling of the 911 calls.
- B. Another perception is that too many non-emergency calls are made by the public to 911. Nationally, some anecdotal reports have estimated that up to 80% of 911 calls are for non-emergency requests. This is a local concern as well. These non-emergency calls tie up the 911 trunks and staff resources at the PSAPs, and may interfere with the ability of true emergency calls to receive the prompt assistance the 911 system was designed to deliver.

I. DEFINE THE CURRENT PERCEIVED PROBLEMS THAT 311 COULD POTENTIALLY RESOLVE

- The following is the report that presents the results of the 311 feasibility study. The report is organized according to the elements of the Scope of Work for this study (Appendix B).
- A. There is a perception that 911 call volumes in King County are continually increasing at greater rates than would be expected with the population growth. There is concern that due to this growth, the future 911 call volume will exceed the 911 system network, equipment, and staffing resources, causing delays in the handling of the 911 calls.
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The E-911 network consists of dedicated 911 trunks from each telephone company central office into the 911 routing switch, which is located at the US West Seattle Main central office in downtown Seattle. Currently, there are seven telephone companies offering service in King County. In addition, there are also dedicated 911 trunks from the 911 routing switch out to each of the PSAPs. This switch is the component in the system.

I. Network

The E-911 system is comprised of several components. These include:

A. Definition of the E-911 System in Operational and Service Delivery Terms

II. DEFINE THE CURRENT E-911 SYSTEM

The final assumption that will be discussed in this report is the view that services that asked the FCC to reserve 311 for this purpose. Implementing a 311 system will enhance community policing efforts. In fact, it was the U.S. Department of Justice's Office of Community Oriented Policing Services that asked the FCC to reserve 311 for this purpose.

There is also a perception that the number of 911 calls drives the number of police responses, and that during peaks of multiple emergency events, delays in response times are due to the high number of 911 calls. In fact, this perception is what drove the U.S. Department of Justice to request the reservation of 311.

Another concern is that many general government offices are only open to provide service Monday through business hours, and only answer their seven-digit telephone lines during these hours. Since these lines are not answered even when they know they do not have a police, fire, or medical emergency, they may call 911 because it is the only number that is answered continuously, evenings, nights, and weekends, when people need service during these times, seven-digit telephone lines during these hours. Since these lines are not answered even when they know they do not have a police, fire, or medical emergency.

They are located in when they need to call for information or non-emergency service, and 36 fire departments, it is difficult for citizens to know which agency covers citizens which contract with the King County Department of Public Safety for various government services. With 37 cities, 36 police departments, including those cities which make it difficult for the public to know which seven-digit numbers to call for information or non-emergency service, and 36 fire departments, it is difficult for citizens to know which agency covers citizens which contract with the King County Department of Public Safety for various government services. With 37 cities, 36 police departments, including those cities which make it difficult for the public to know which seven-digit numbers to call for information or non-emergency service.

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which is responsible for routing all 911 calls to the correct PSAP. This is a dedicated network that is not affected by the rest of the telephone network. The E-911 network does not become overloaded by the rest of the network during periods of heavy use. Once a telephone has dialed one from the central office that it is served by, when 911 is dialed, the 911 call will be transported entirely over this dedicated network. (Refer to Appendix C for a diagram of the E-911 network.)

The 911 trunks are ordered through and maintained by the telephone companies. Traffic data is collected on these trunks by the telephone companies. This data is used to evaluate the network each quarter to ensure that there are sufficient 911 trunks available to provide the citizens served by each central office an acceptable level of access to meet average call distribution, only one out of every one hundred callers should get a busy signal. The E-911 Program Office has adopted a policy of ensuring trunking from the central offices at twice the level needed to meet this standard. The traffic studies show no busy signals in the system except in extreme circumstances.

This network configuration of separate trunking from each central office also ensures that an incident in one area of the country does not block all of the 911 trunks into a PSAP. Even if a major event which is visible to many people occurs in one area, citizens served by other central offices will still have access to 911.

The E-911 data base determines the routing of the 911 calls and what information will display at the PSAPs. The database is designed as the Master Street Address Guide (MSAG) on the diagram in Appendix C.

When a person signs up for telephone service, their telephone number and address is entered into the E-911 database, and a routing code is assigned based on the police and fire jurisdictions that provide service to their address. This information routes their 911 call to the appropriate PSAP, and provides the customer information that displays on a screen at the PSAP. This includes the name, address, type of phone service, and identification (ANI) and Automatic Location Identification (ALI).

2. Data base

This network configuration of separate trunking from each central office except in extreme circumstances.

This standard, only one out of every one hundred callers should get a busy signal. The E-911 Program Office has adopted a policy of ensuring trunking from the central offices at twice the level needed to meet average call distribution, only one out of every one hundred callers should been established as a P.O. grade of service, which means that with an average call distribution, the traffic studies show no busy signals in the system except in extreme circumstances.

The 911 industry standard for an acceptable level of access has been established as a P.O. grade of service, which means that with an average call distribution, only one out of every one hundred callers should demand. The 911 industry standard is adjusted to accommodate the change, the trunking in the system is adjusted to meet this standard. The 911 industry standard for an acceptable level of access to each central office an acceptable level of access to 911. As 911 call volumes increase, the trunking in the system is adjusted to meet this standard. This data is used to evaluate the network each quarter to ensure that there are sufficient 911 trunks available to provide the citizens served by each central office an acceptable level of access to meet average call distribution, only one out of every one hundred callers should get a busy signal. The E-911 Program Office has adopted a policy of ensuring trunking from the central offices at twice the level needed to meet this standard. The traffic studies show no busy signals in the system except in extreme circumstances.

The 911 trunks are ordered through and maintained by the telephone companies. Traffic data is collected on these trunks by the telephone companies. This data is used to evaluate the network each quarter to ensure that there are sufficient 911 trunks available to provide the citizens served by each central office an acceptable level of access to meet average call distribution, only one out of every one hundred callers should get a busy signal. The E-911 Program Office has adopted a policy of ensuring trunking from the central offices at twice the level needed to meet this standard. The traffic studies show no busy signals in the system except in extreme circumstances.

Our E-911 system has a standard that 90% of the 911 calls are to be answered within 10 seconds. It is the responsibility of each PSAP to provide sufficient staffing as their call volumes change to ensure that they answer the 911 calls within this standard. Currently, close to 95% of the 911 calls are answered within this standard.

The remaining four PSAPs only receive transferred 911 calls. The initial 911 calls, If the caller needs fire or EMS service, their call may be handled at the same PSAP, or it may be transferred to another PSAP. The police service. There are currently 14 of these primary PSAPs that answer the initial 911 calls. 18 PSAPs. (Refer to Appendix D for a profile of the PSAPs.) In our system, 911 calls are always initially routed to the PSAP that provides the consolidation of some of these agencies, this number has decreased to 18 PSAPs. Through the consolidation of some of these agencies, this number has decreased to 18 PSAPs. (Refer to Appendix D for a profile of the PSAPs.) In our E-911 system was implemented in 1985, there were 27 PSAPs. Through communications centres which answer and handle the 911 calls. When the E-911 system was implemented in 1985, there were 27 PSAPs. Through the Police Service. There are currently 14 of these primary PSAPs that answer the initial 911 calls. 18 PSAPs. (Refer to Appendix D for a profile of the PSAPs.) In our system, 911 calls are always initially routed to the PSAP that provides the consolidation of some of these agencies, this number has decreased to 18 PSAPs. (Refer to Appendix D for a profile of the PSAPs.) In our

The Public Safety Answering Points (PSAPs) are the public safety

4. PSAPs

ANI/ALI display units are located at each call answering position at each data base; fixed transfer buttons, which can be programmed with any telephone number and allow the 911 call to be transferred with the push of one button; reverse ALI searches, which are used to search the ALI data base for an address when a caller reports an emergency at a different location in which they only know the telephone number; and last ten ALI look-up, which allows the call receiver to scroll back through the last ten ALI displays if they need information on a previous call.

Aided Dispatch (CAD) system at each PSAP. The E-911 controller is interfaced to the telephone equipment and the Computer notification, and providing disconnection supervision for the call. The E-911 controller's voice and ANI/ALI data are sent to, generating ringing control, the 911 call by determining which position at the PSAP the PSAP which the 911 trunks are connected to. This unit receives and controllers and ANI/ALI displays. The E-911 controller is a unit at each The equipment component of the E-911 system consists of E-911

3. Equipment

In 1991, there was a perception among the PSAPs that the E-911 system was being overused by the public, and too many non-emergency calls were made to 911 rather than the seven-digit non-emergency numbers. As a

time they needed police, fire, or emergency medical assistance. Public education message changed to encourage citizens to call 911 any prior to the implementation of the E-911 system. Due to this study, the still being reported to the seven-digit emergency numbers that were in use PSAPs were received on 911. The remaining 40% of emergencies were indicated that only about 60% of the emergency calls answered at the of 911, and 911 was promoted as an *emergency* number. A study in 1987 initially, the educational materials focused on announcing the availability

Public Education Committee made up of representatives from the PSAPs. Office is assisted in assessing the need and designing the materials by a materials are modified to meet the current needs. The E-911 Program emergency calls is continually evaluated, and the 911 public education 911 and the seven-digit non-emergency numbers for emergency and non-public on the proper use of the system. The trend of the public's use of Office has produced a variety of public education materials to educate the Since the implementation of the E-911 system in 1985, the E-911 Program

6. Public Education

Due to the fact that it was perceived that these non-emergency numbers were too difficult for the public to locate in the blue or white pages of the telephone directories, an effort was made to also list these numbers on the front inside cover of the telephone directories. US West agreed to replace each of the jurisdictional telephone numbers in the states that the 911 emergency telephone number is not intended as a total replacement for the telephone service of the PSAPs. Each PSAP is required to list a separate telephone number for non-emergency calls in the telephone directory for each of the jurisdictions they serve.

The interlocal agreement between King County and each of the PSAPs states that the 911 emergency telephone number is not intended as a total replacement for the telephone service of the PSAPs. Each PSAP is required to list a separate telephone number for non-emergency calls in the telephone directory for each of the jurisdictions they serve.

5. Non-Emergency Access

service from all wireless carriers, and this system has only been PSAPs. This is a limited system that is not expandable to full E-911 routing cellular calls by cell site and sending the seven-digit ANI to the system was developed in 1995 in which the two major carriers have been devices, including cellular phones, when they call 911. In King County, a telephone number or location information is available from wireless currently, in most areas of the country, including Washington State, no

7. Wireless 911

citizens they serve.

These materials are produced by the E-911 Program Office, and are used throughout the country by the PSAPs, the police and fire departments, and others in their public education programs. Although the materials send a common message about the appropriate use of 911, this plan allows each individual jurisdiction to integrate the message into their own public education efforts to meet the needs of their own department and the individual jurisdiction to distribute the message into their own public

for elementary age children, stickers, and a show bag to carry these situations when children do not have access to crayons, an activity book a coloring book for preschoolers, coloring crayons for distribution in numbers; and a variety of 911 educational materials for children, including being revised to include both 911 and the seven-digit non-emergency English and Spanish versions; a senior citizen brochure; a refresher magnet board, with education on when to call 911 and when to call the police and fire business numbers, and spaces to write in those numbers English education items in use today include: an adult brochure, in both

Program's 1998 Budget request.

Public Education Committee has recommended that this message also be delivered through the media, and this proposal is included in the E-911 emergency numbers. In addition to publishing this message in print, the evaluate the public appropriate use of the seven-digit non-

again focuses on the use of the word **emergency** along with efforts to public to call 911 if they need a **response**. This has been recently re-

The current public education message still focuses on instructing the West telephone directors.

seven-digit non-emergency numbers on the front inside cover of the US response is needed. These efforts were concurrent with the listing of the instructed the public to call 911 if a police, fire, or emergency medical result, the message delivered in the educational materials was changed to

These upgrades are expected to be very costly. The current projection is \$1 million to implement Phase I in King County. Although there are still many unknowns, initial costs to implement Phase II in Washington State are estimated at \$87 million. Phase II costs have not yet been broken out by county. Even though the costs are high, it is critical that King County implement this technology due to the significant impact these phones will have on E-911 service in the future.

Phase II provides full E-911 service, with ANI, ALI, and selective routing, and is due by October 1, 2001. In order to implement this service, significant upgrades in the current E-911 technology are needed. These include upgrades to the wireless and wireless networks, the database, and the PSAP equipment, as well as the installation of new technology which is capable of identifying the location of mobile callers.

911 callers don't get busy signals, but also ensure that a single incident could not totally tie up all of the 911 trunks into a PSAP so that wireless carriers who provide service in King County to implement this system. A carrier specifically designed to ensure that there is enough capacity so that cellular callers could not get through. The network is being run on a highway, can generate multiple 911 calls. The network is being concerned with the wireless calls is that a single event, such as an accident with the identification of the cell site through which the 911 call was due by April 1, 1998, and provides the ANI of the wireless caller along with the implementation of this service will take place in two phases. Phase I is implemented to order this service. The ruling specifies that the providing full E-911 service within five years. It is up to each local ruling which requires that the wireless carriers must be capable of fulfilling jurisdiction to order this service. The ruling specifies that the

The Federal Communications Commission (FCC) has recently issued a ruling which requires that the wireless carriers must be capable of fulfilling jurisdiction to order this service. The ruling specifies that the providing full E-911 service within five years. It is up to each local ruling which requires that the wireless carriers must be capable of fulfilling jurisdiction to order this service. The ruling specifies that the

With this increased use, it will be imperative to be able to determine the calls in major metropolitan areas will be made from wireless phones. With this increased use, it will be imperative to be able to determine the telephone number and location of these callers in order to provide them with effective 911 service.

40% growth in the number of wireless phones in use throughout the nation. As the cost of wireless service decreases and as the features and functionality increase, the use of these phones will become even more promising. It is projected that in the near future, up to 80% of the 911 promises. In 1996, the wireless carriers reported that there was a cellular phones. In 1996, the wireless carriers reported that there was a

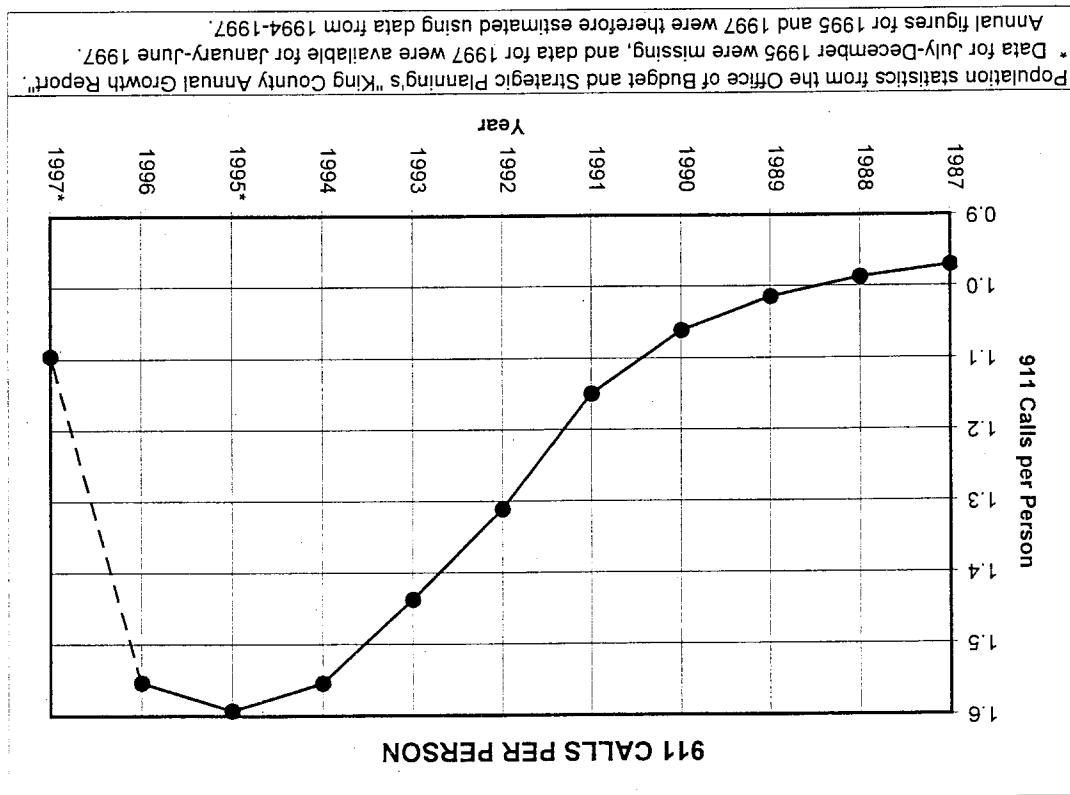
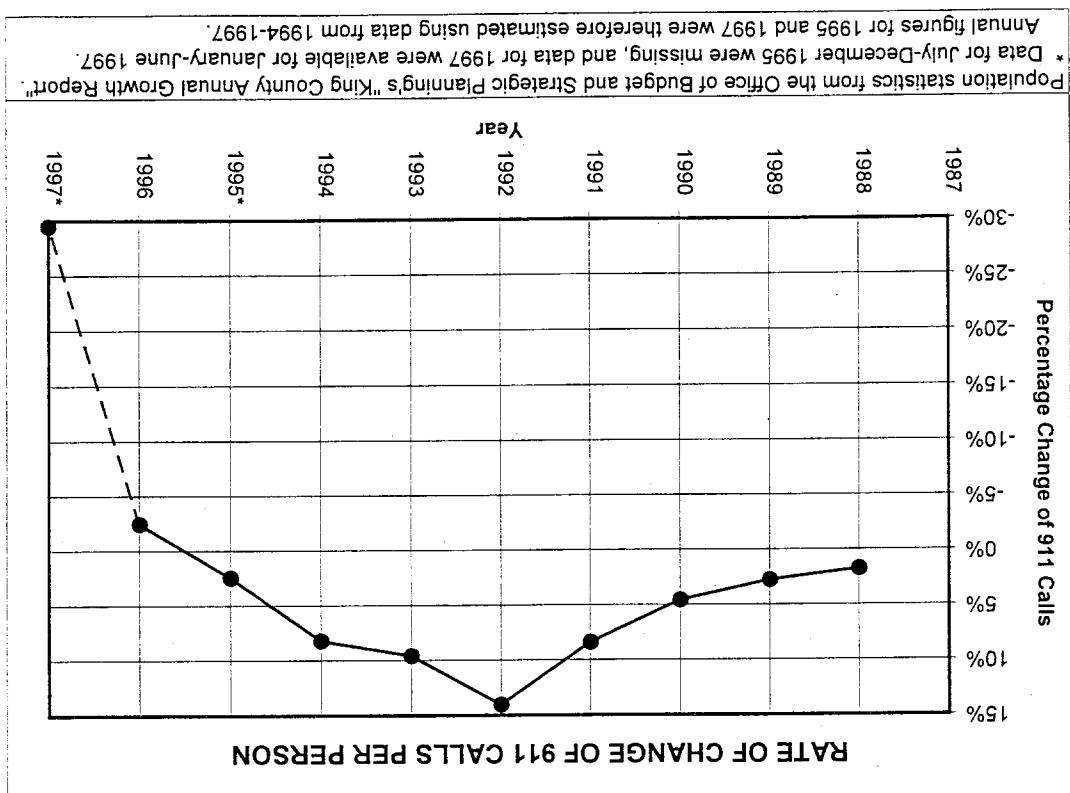
10 - 15% of the total 911 calls received in King County come from implemented in King County and is not available throughout the rest of the state.

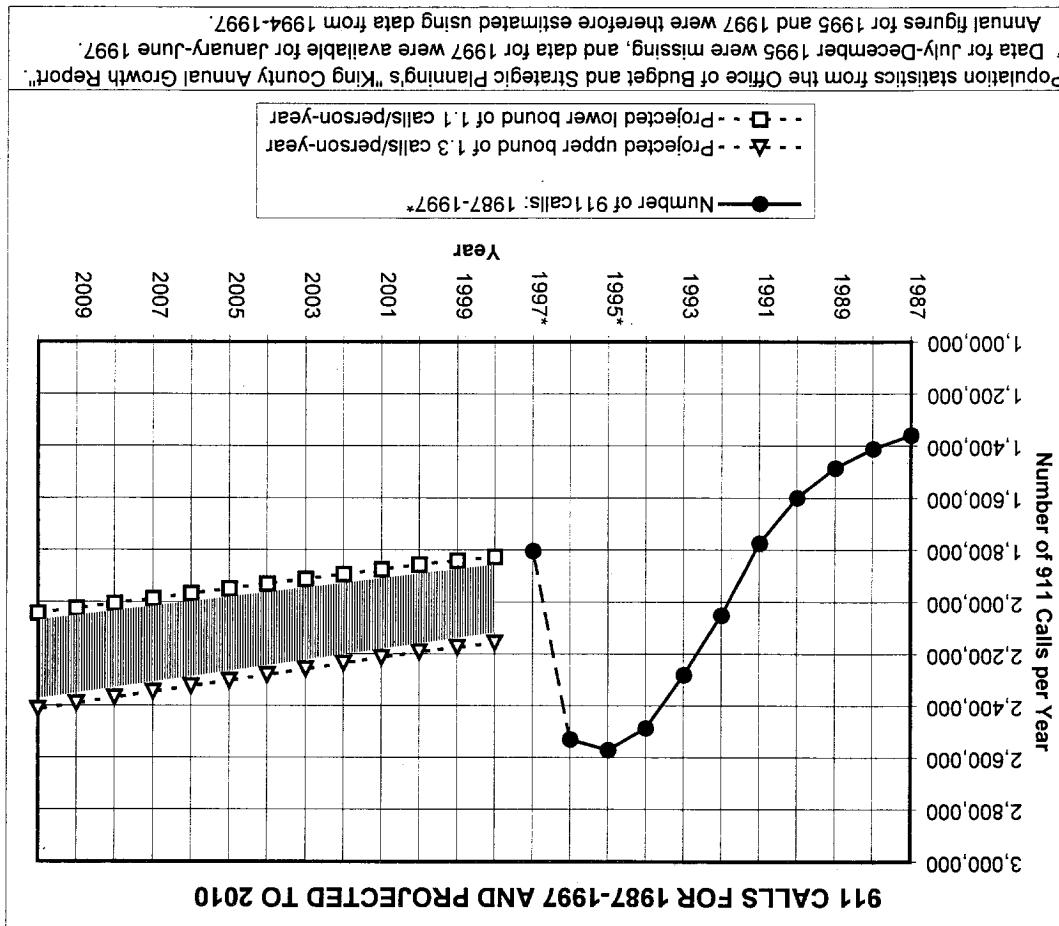
The two charts on the following page display this information graphically.

Note: 911 call statistics are unavailable for the second half of 1995 and 1997, so these years totals are estimated based on pro-rated January - June data.

YEAR	POPULATION	911 CALLS	911 CALLS PER PERSON	RATE OF CHANGE
1987	1,400,200	1,358,878	0.97	
1988	1,428,600	1,410,575	0.99	1.74%
1989	1,463,300	1,484,646	1.01	2.76%
1990	1,507,350	1,599,389	1.06	4.58%
1991	1,542,300	1,773,395	1.15	8.37%
1992	1,564,500	2,051,304	1.31	14.03%
1993	1,587,700	2,281,302	1.44	9.59%
1994	1,599,500	2,486,489	1.55	8.19%
1995	1,613,600	2,570,197	1.59	2.46%
1996	1,628,800	2,530,298	1.55	-2.47%
1997	1,646,200	1,821,998	1.11	-28.75%

1. The following chart displays the 911 call volumes from 1987 to the present, along with King County population statistics. 911 call volume statistics were obtained from the E-911 system traffic study reports produced by US West, and the population statistics were obtained from the King County Annual Growth Report produced by the Office of Budget and Strategic Planning.





When examining the "Rate of Change of 911 Calls Per Person" chart on the previous page, it appears that the rate of change in the number of 911 calls per person per year is related to 911 public education. In the late 1980s through 1991 when the public education message was to call 911 for assistance, the rate of change steadily increased. The message began to change to utilize the word *response* late in 1991, along with the publication of the seven-digit non-emergency numbers on the front inside cover of the telephone directories in 1992. This appears to coincide with a shift in the rate of change from an increasing trend to a decreasing trend.

The relationship of 911 calls to population has not been stable over the past ten years, and as a result, a predictable trend of 911 call volumes based solely on population cannot be projected into the future. Only the first six months of data is currently available for 1997, but in using this data and the call volumes from 1996 to estimate the yearly total for 1997, it appears that there is a dramatic drop both in the calls per person and in the rate of change. It is anticipated that this decreasing rate of change is not sustainable. Using this assumption, a target has been established to maintain a level of 911 calls per person between 1.1 and 1.3 calls per person into the future. This target was then used in the graph below to project 911 call volumes through the year 2010. At this growth rate, 911 call volumes are not expected to reach the 1994-1996 level until after 2010.

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The previous section discusses the PSAP's definition of an inappropriate 911 call as being any 911 call that does not require a police, fire, or emergency medical response. Correspondingly, an emergency call is any call that does require a response. The PSAP's dispatch policies are then applied to these emergency calls. Police, fire, and EMS calls are screened and prioritized, and are these dispatch policies closely coincide with the PSAP's definitions of response.

C. Description of Each PSAP's Definition of Service

(Refer to the chart in Appendix F.)

digit numbers when they need information or non-emergency assistance. indicates that the public is responsibly making the decision to call seven-half of the calls received at the PSAPs are seven-digit calls, which abuse 911 by making inappropriate 911 calls, the statistics also show that to 62%. In addition to indicating that the citizens of King County do not remove the City of Seattle from the statistics, this statistic goes up close to 50% of the total calls answered at the PSAPs are seven-digit calls. percentage of these calls is consistently low. In addition, countywide, there are a few jurisdictions in which the inappropriate 911 calls make up below the perceptions being made on both a local and a national level. inappropriate calls, according to each PSAP's own definition. This is far Countywide, these statistics show that only about 6% of the 911 calls are a much higher percentage of the total 911 calls, but in general, the

electronically tracked, were also recorded to allow for a comparison between the three statistics. (The chart in Appendix F displays the results of this call tracking.)

total seven-digit calls received at each PSAP, both of which were inappropriate 911 calls for this two week period, the total 911 calls and the definition of an inappropriate 911 call is any 911 call that does not require a police, fire, or emergency medical response. In addition to tracking the PSAPs, these definitions are included as Appendix E. In general, the PSAPs asked to develop their agency's definition of an inappropriate 911 call June 8 - June 21, 1997. Before the tracking period began, each PSAP was the PSAPs were asked to hand tally these calls for a two week period from Due to the fact that inappropriate 911 calls are not electronically tracked,

average month. During the study period, the month of June was the most 911 call volume. During the study period, the month of June was the most which month in the year is the most representative of the average monthly volumes by month for the past six years was performed to determine and are therefore inappropriate calls to 911. An analysis of 911 call of the 911 calls in King County are non-emergency or informational calls, An important component of this study process was to determine how many 2.

In general, the responding agencies indicated that for most cities and fire departments, the offices are staffed and the phone lines are answered Monday through Friday during general business hours. Many of the fire departments answer when fire personnel are in the station. Approximately two-thirds of the businesses lines are forwarded to a fire station after hours, and these lines are answered when fire personnel are in the station. The remaining one-third of the police departments are accessible either by phone or at their department's offices 24 hours per day, seven days per week.

Regional 311 Study Survey", which is included in this report as Appendix I.)

As is stated earlier in this report, there is a perception that since general government telephone lines are not answered evenings, nights, and weekends, people need service during these times, they may call 911 because it is the only number that is answered continuously, even when they do not have a police, fire, or medical emergency. In order to allow this perception to be analyzed, information was collected from each of the agencies that participated in the study regarding their business hours and the hours their public phone lines are answered. (A tabulation of this information can be found in the "Results of the study regarding their business hours and the hours their public phone lines are answered".) A tabulation of this information can be found in the "Results of the study regarding their business hours and the hours their public phone lines are analyzed, lines are forwarded to a fire station after hours, and these lines are forwarded through Friday during general business hours. Many of the fire departments answer when fire personnel are in the station. The remaining one-third of the police departments are accessible either by phone or at their department's offices 24 hours per day, seven days per week.

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In Section I of this report, the perception that the number of 911 calls drives the number of police responses was discussed. In actuality, the number of police responses and police response times are somewhat independent of the numbers of 911 calls. All of the PSAPs in King County who answer 911 calls for police departments have different police response policies. Police officers are not dispatched on every 911 call. The 911 calls are screened, and most are either handled by the 911 call taker, or transferred to other more appropriate agencies or to a secondary operator, where the call is handled or a report is taken over the phone. As an example, through the use of a different police response policy, the Seattle Police Department only dispatches police officers on 34 - 36% of their 911 calls. All of the PSAPs in King County who answer 911 calls for police departments have different police response times independent of the numbers of 911 calls. All of the PSAPs in King County who answer 911 calls for police departments have different police response policies. Police officers are not dispatched on every 911 call. The 911 calls are screened, and most are either handled by the 911 call taker, or transferred to other more appropriate agencies or to a secondary operator, where the call is handled or a report is taken over the phone. As an example, through the use of a different police response policy, the Seattle Police Department only dispatches police officers on 34 - 36% of their 911 calls.

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D.

Statistics from Other Government Agencies

evaluated on a routine basis and network, equipment, and staffing are adjusted to emergency assistance or information. The capacity of the E-911 system is 911 in emergency situations and seven-digit numbers when they need non-emergency calls.

One alternative would be to continue the current system, with the public calling

A. Continue the Current Scenario With No Changes

The following possible alternatives that could be used to address the perceived problems outlined in Section I were then described. Although there may be other options that could be explored to alleviate the perceived problems, for the purposes of this study, these were the scenarios that were discussed and presented as options to the study participants.

Study participants were educated on the existing E-911 system and the complementary "Survey" which was distributed to the agencies participating in the study is included as meeting their needs and the needs of their citizens today. (The "Regional 311 Study" asked in an attempt to ascertain how well the respondents felt the existing system was distributed to all of the agencies participating in this study, a variety of questions were seven-digit non-emergency access numbers that are in use today. In the survey that was distributed to all of the agencies participating in this study, a variety of questions were asked in an attempt to ascertain how well the existing system was distributed to all of the agencies participating in this study, a variety of questions were

Appendix H.)

III. POSSIBLE ALTERNATIVES THAT COULD BE USED TO ADDRESS THE RECEIVED PROBLEMS

Informational Meeting Comments.)

These departments feel that there is identity in a telephone number, and the public ears that their telephone number and identities their particular police department in. They want people to call a specific police agency when they need assistance. These meetings agreed that they want people to know which jurisdiction they are coming from. The police departments who were represented at these meetings do not share the view that implementing a 311 system will enhance County do not share the view that implementing a 311 system will enhance

Meetings held as part of this study process that the police departments in King County do not share the view that implementing a 311 system will enhance

It was very interesting to hear via the comments at the Regional 311 Informational weekdays during the business hours.

departments are only accessible for non-emergency or business service on

911 networks can be grown to tremendous sizes, and the E-911 equipment currently in use can be expanded to sizes beyond conceivable need. The major expense with this option will be at the PSAPs. Staffing would need to be added to answer the increased call volume. Non-emergency calls could potentially be accommodated to sizes beyond conceivable need.

Another option would be to modify the existing approach and allow the public to call 911 for information or non-emergency situations, and to discontinue public education efforts regarding the appropriate use of 911 and the seven-digit non-emergency telephone numbers. As was discussed earlier in this report, the capacity of the existing E-911 system is evaluated on a routine basis and network equipment, and staffing are adjusted to accommodate the changes in 911 call volumes. This system could simply be expanded to accommodate the future demand of both emergency and non-emergency calls.

C.

Modify the Existing E-911 System

In addition, study participants were asked to rate the accessibility of the seven-digit numbers to the public. Currently, the US West telephone directories list the non-emergency seven-digit numbers for the police and fire departments on the front inside cover of the directory. The telephone numbers for other general government agencies are listed in the blue pages and the white pages of the telephone directories. Respondents were asked whether this current method of listing these numbers in the telephone directories makes them accessible enough to the public, or whether further work needs to be done to make them more easily identifiable. This could eliminate unnecessary calls to 911 from people who call as a last resort because they cannot locate the general government telephone number they are seeking.

Another alternative presented in the study was to continue the current E-911 system and implement an enhanced public education program. The survey asked the respondents to rate the effectiveness of the current public education approach, in which the E-911 Program Office provides public education material on the appropriate use of 911 to the local jurisdictions for their use in public education programs. The philosophy behind this approach is to allow each local jurisdiction to integrate the education on the use of the E-911 system into their other public education efforts to meet the needs of their department and the citizens it serves. Because the message is delivered at the local level, there has been no organization county-wide effort to educate the public on the use of non-emergency seven-digit numbers for public safety agencies. Survey respondents were also asked to rate the effectiveness of this approach.

B.

Implement an Enhanced Public Education Program

Current public education plan would also be continued, accommodate the change in call volumes. This practice would continue, and the

This model would also require the installation of a 311 network and database. Additional call taking equipment would need to be installed at

311 calls from the handling of the 911 calls. A separate jurisdiction provides service and routed to the existing PSAPs. A separate 311 calls in this model would also be selectively routed based on which

2. 311 Calls Answered at PSAPs by Separate 311 Call Takers.

In this model would require the installation of a 311 network and database, and the addition of call taking equipment and staff at the PSAPs to handle the additional call volume. Due to the anticipation that emergency calls will be received on 311, the provision of ANI and ALI on these calls would be desirable, although it is unclear whether ANI/ALI can legally be provided on non-emergency calls.

In this model, 311 calls would be selectively routed based on which jurisdiction provides service, and routed to the existing PSAPs. The 311 call takers would answer both types of calls. 311 calls would be answered with a lower priority than the 911 calls, but the same group of calls would be answered by the existing 911 call takers. 311 calls would be anticipated with a volume similar to the implementation of a 311 system. Due to the anticipation that emergency calls will be received on 311 calls from the handling of the 911 calls, but the same group of

1. 311 Calls Answered At PSAPs by 911 Call Takers.

There are a variety of models of 311 systems that could be implemented. For the purposes of this study, the following models were considered:

The implementation of a 311 system is another alternative for solving some of the perceived problems. The decision to be made when considering this alternative is to determine which services would be accessible through 311. Should 311 provide access to non-emergency police services only, or should fire, EMS, and/or general government services also be accessible through 311? Each of these types of services was identified separately in the survey, and agencies were asked to evaluate the appropriateness of using 311 to access each service.

Handled by establishing sections of lower priority call takers which the non-emergency calls could be transferred to, or these calls could be transferred into a recorded announcement. The cost of this additional staffing and of the facilities needed to accommodate them would depend on the volume of calls received, and is almost impossible to predict. It is likely the impact of this approach could double the number of call takers currently handling the existing call volumes.

D.

Implement a 311 System

In this model, an automated answering system would be installed to provide information to callers. This model would utilize selective routing so that each local government could customize the information presented to their citizens. Callers would receive information only, and their calls would not be transferred to other telephone numbers for service.

6. 311 Calls Answered by an Automated Answering System with Information Menus.

In this model, 311 calls would be selectively routed to predetermined local governments within each jurisdiction to handle these calls. Due to the anticipation of emergency calls via 311, ANI/ALI on these calls would also be desirable, so the installation of 911 equipment at each of these locations would also be required.

5. 311 Calls Answered at a Local Government Agency.

This model would require the construction, equipping, and staffing of multiple 311 call centers. Selective routing of the calls would be required, and the same comments regarding ANI/ALI and the training of staff would also apply here.

4. 311 Calls Answered at Multiple 311 Call Centres That Correspond to the Existing PSAPs.

This model presents the option of establishing one regional 311 call center. This model would not require selective routing, but would require a very large call center to be constructed, equipped, and staffed. Again, since emergency calls would be received on 311, ANI/ALI would be desirable. ANI/ALI can only be interpreted by 911 controling equipment, so this model would require the installation of this equipment with 911 highly trained in questioning the callers and in determining which PSAP displays at each call answering position. The staff would need to be or other agency to transfer the calls to.

3. 311 Calls Answered at a Separate Call Center.

The PSAPs, and 311 call taking staff would need to be hired and trained. ANI/ALI on these calls would be also desirable, and it is assumed that the 311 staff would receive comparable training to 911 staff, or that the system would be configured to allow for the efficient transferring of 311 emergency calls to the 911 call takers.

identify a person within their organization to be their representative for the study. These Each agency was initially sent a letter which outlined the issue and requested them to

perspective represented in the results of the study. organizations as well as provide them with the opportunity to have their agency's and EMS agencies in King County, this study process was designed to both educate these and order to assess the interest in 31 among all of the local governments and police, fire,

AGENCIES ARE INTERESTED IN PURSUING DETERMINE WHICH OF THE ALTERNATIVES THE PARTICIPATING

IV.

efficient access to services. very confusing for the citizens for whom the system is intended to provide more governments and telephone companies in King County, this situation would be to obtain information about permitting processes. With the complexity of government services, while another government could plan to use 31 for their citizens request 31 from one telephone company to provide access to non-emergency would provide the service. Under this scenario, one local government could between local government agencies, or between the telephone companies that government services. There are no procedures established for coordination request 31 system to provide access to non-emergency police service and/or any local The FCC ruling allows any local government to request the implementation of a

planned for in the implementation strategy. impact this would have on the surrounding areas would need to be evaluated and individual jurisdictions could implement 31 within their area only. If so, the made on whether this system should be implemented countywide, or whether proceeded with the implementation of a 31 system. A decision would need to be There is another important component to consider if the decision is made to

system. to staff during the business week and inform callers of this fact through the answer the transferred calls 24 hours per day throughout the week, or only Decisions would need to be made on whether to staff the agencies that included for their jurisdiction and where the calls are to be transferred. addition, each local government would decide what information is model would require the use of selective routing and ANI/ALI, so that transfer the caller to the seven-digit number of their selected choice. This system that would guide the caller through information menus, and would This model would require the installation of an automated answering

7. 31 Calls Answered by an Automated Answering System with Menu. Dialed Routing to the Appropriate Seven-Digit Telephone Numbers.

how would you rate the overall effectiveness of this approach?
number to obtain non-emergency service. For your service area,
to request emergency assistance or they can dial a seven-digit
public safety agency when they need service. They can call 911
QUESTION 1. *Presently, the public is provided two mechanisms of contacting*

than identified as separate groups.
 similar manner, so they will be discussed in this report as one group of respondents rather
 In analyzing the responses to the survey, these four groups consistently responded in a

of responses from within the four groups.
 these four groups are given equal weight, to balance the discrepancy of unequal numbers
 collectively. In the "Analyses of Regional 311 Study Survey Responses" (Appendix J),
 responses from police, fire/EMS, cities, and PSAPs were looked at separately and
 agency comments are also included in this form.) In analyzing the survey results,
 responses are tabulated in Appendix F, "Results of Regional 311 Study Survey". All
 The following is a discussion on the responses to the questions in the survey. (The

titled "Regional 311 Study Survey", is included as Appendix H).
 organization's viewpoint on these issues were distributed. (A copy of this document,
 Finally, the surveys that each representative was asked to complete indicating their

their area.
 implemented countywide, or whether individual jurisdictions could implement 311 within
 also discussed. In addition, the discussion included the issue of whether 311 should be
 service. The issue of the complexities and cost of providing wireless access to 311 was
 funding a 311 system weighs against other needs, including the need to fund wireless 911
 a 311 system would be funded. A determination must be made on how the priority of
 be addressed if the decision to implement 311 is made. One issue is the decision on how
 A discussion was then conducted on some of the broader policy issues that will need to

EMs, and general government services, was also presented.
 services that could be accessible through 311, including non-emergency police, fire,
 section of this report, were then presented. An explanation of the various types of
 could be used to address these perceived problems, which are outlined in the previous
 a list of the participants' comments during this discussion. (Appendix G contains
 problems with the existing E-911 service in their own community. (Appendix G contains
 issue. Participants were then invited to participate in a discussion of the real or perceived
 the current E-911 system works for wireless phones, and an explanation of the wireless
 The agenda at the meeting included an outline of the study process, an overview of how
 accessible to all study participants.

days at different times, one in Kirkland and one Tukwila, in an effort to make them
 to attend an informational meeting. Two meetings were held in June on two separate
 representatives were sent information to educate them on the issue, and an invitation

Comments indicate that this listing needs to be included in the telephone directories published by all of the telephone companies, and that more could be done to clarify the information presented on this page. Currently, US West is the only telephone company that

manner makes them accessible.

12% of the agencies do not feel that listing the numbers in this and another 32% see it as effective, but in need of improvement. 56% of the responding agencies see this listing as highly effective, numbers to the public when they need non-emergency assistance. This question was used to assess the accessibility of the seven-digit

approach?

Presently, many telephone directories list the non-emergency service area, how would you rate the effectiveness of this service area on the front inside cover of the directory. For your seven-digit numbers for the police and fire departments in the

QUESTION 3.

indicating that having a high number of PSAPs is not effective. effective or effective, with 5% of the responding agencies indicating that the current system of multiple PSAPs is either highly seeing more consolidation of PSAPs. 95% of the respondents PSAPs is seen as effective, or if there is interest among agencies in This question attempted to ascertain whether having multiple

accessing?

Presently, calls to 911 in King County are answered by one of the 14 primary PSAPs. For your service area, how would you rate the overall effectiveness and responsiveness of 911 call answering and

QUESTION 2.

Comments. Refer to Appendix F for a complete listing of the respondents education regarding the use of the current system are needed. included in the survey indicated that improvements in public needed or may be needed in the future. Most of the comments effective or effective did indicate that some improvements are Some of the agencies that rated the current system as highly

current system is not effective.

effective. None of the responding agencies indicated that the system is highly effective. Another 23% rated the system as digital numbers. 77% of the respondents indicated that the current current system of requesting service either through 911 or seven-

This question was designed to assess the effectiveness of the

This question touches on the issue of the message on the appropriate use of 911, this plan allows each individual jurisdiction the public education materials send a common message about the appropriate use of 911 being delivered at the local level. Although

Presently, there is no organized, county-wide effort to educate the public on the use of non-emergency seven-digit numbers for public safety agencies. For your service area, how would you rate the effectiveness of this approach?

94% of the respondents rated this scenario as highly effective or effective, and only 6% of the responding agencies see it as not effective.

Currently, a variety of public education materials are provided to these materials in their own public education programs. Local jurisdictions by the E-911 Program Office. These materials focus on educating the public on the appropriate use of 911. This message is delivered at the local level as each jurisdiction uses

E-911 Program to the local jurisdictions for their use in public education programs focuses on the appropriate use of 911. For your service area, how would you rate the effectiveness of this approach?

Presently, the public education material provided by the county telephone directories to make these numbers more easily identifiable. That work needs to be done to redesign these sections of the effective, and need significant improvement. Comments indicated effective. 10% of the agencies feel the current listings are not pages are highly effective, and 19% see the current listings as respondents indicated that the current listings in the blue and white seven-digit numbers in the telephone directories. 71% of the difficult and too confusing to locate the correct general government This question attempted to assess the perception that it is too

Presently, general government business numbers are listed in the blue pages and the white pages of the telephone directories. For your service area, how would you rate the effectiveness of this approach?

is providing this service, and only in King County and a few other counties. Work is currently underway to expand these listings throughout the state in all telephone directories.

QUESTION 6

QUESTION 5

QUESTION 4

QUESTION 7.

Comments indicate interest in a county-wide public education campaign, including the use of the media. Some of the comments still indicate a preference to not have a standardized level of preference on where and how non-emergency calls should be answered. The possible alternatives were 911, seven-digit non-emergency numbers, and the various options for a 311 system that were discussed in the previous section of this report.

In this section of the survey, agencies were asked to indicate their agency strongly encouraged the use of because it best met the needs of their organization, and 0 being the alternative that the agency would not support because it does not meet the needs of their organization. Respondents were asked to rate each alternative, and the same score could be used more than once. For their organization, responses were rated to rate each alternative, reasonable alternative, not too desirable, and does not meet needs.

Agencies assessed where non-emergency calls for police, fire, EMS, and general government calls should be answered separately. This allowed for the identification of any distinctions in how these different types of calls should be handled. In analyzing the survey responses, it became apparent that there were no significant differences in how the responding agencies rated the alternatives

the purposes of analyzing the responses, this ten point scale was grouped into the five categories of strongest preference, strong preference, reasonable alternative, not too desirable, and does not meet needs. For the purposes of analyzing the responses, this ten point scale was grouped into the five categories of strongest preference, strong preference, reasonable alternative, not too desirable, and does not meet needs.

A ten point scale was used, with 10 designating the alternative that the agency strongly encouraged the use of because it best met the needs of their organization, and 0 being the alternative that the agency would not support because it does not meet the needs of their organization. Respondents were asked to rate each alternative, reasonable alternative, not too desirable, and does not meet needs.

Only 9% of the responding agencies see this as highly effective and fully meeting their needs. Another 15% rate this as highly effective today, but may need improvements in the future. 43% of the respondents rated this plan as effective, but needing improvements, and 33% gave it a rating of not effective and in need of significant improvement.

Further county-wide 911 education campaigns utilizing the media implementation of the E-911 system in 1985, here have been no services. As a result, other than the campaign that announced the order to meet the needs of their department and the citizens in order to integrate the message into their own public education efforts in

Questions 8 through 12 of the survey questioned whether ANI and ALI were needed on 311 calls, and whether wireless phones should have access to 311. Although there was not strong flavor for these options, slightly more than half of the respondents indicated that if ALI were needed on 311 calls, all wireless phones should be given access to 311.

Although some support for 311 is expressed in the survey comments, most of the comments indicated that the agencies who responded to the survey are opposed to the implementation of a 311 system.

Summary ratings presented on Page 12 of Appendix J, 57 - 77% of the responding agencies indicated that none of the 311 alternatives met their agency's needs. As can be seen in the answers to the PSAPs by separate 311 call takers, to 3% for the automated ranged from 16% for the 311 option where calls are unanswered at 100% for the 311 alternative where calls are answered.

None of the 311 alternatives were very highly rated. The percentage of agencies indicating a strong preference for 311 ranged from 16% for the 311 option where calls are unanswered at 100% for the 311 call takers, to 3% for the automated system.

311 Alternatives

The second highest rated alternative was to have non-emergency calls go to 911. 32% of the respondents rated 911 as their strongest or a strong preference. 21% rated this as a reasonable alternative, and 14% as not too desirable. However, one-third of the respondents indicated that this option did not meet their needs.

The strongest preference indicated in the survey was for non-emergency calls to continue to go to seven-digit non-emergency telephone numbers. 86% of the respondents either rated this alternative as their strongest preference or a strong preference. Another 11% indicated that this was a reasonable alternative, and 4% rated this as not too desirable. There were no agencies that indicated that this alternative did not meet their needs.

911

The alternatives are listed below in order from strongest to least preferred:

for these four types of calls. As a result, all four types of calls will be grouped together in the following discussion.

Seven-Digit Non-Emergency Numbers

The cost estimate for PSA equipment includes the expansion of the E-911 and and are based on existing 911 tariff rates, which may not be applicable for 311. The quotes used in pricing this system were obtained from US West and GTE. One ongoing annual operating costs after the first year would be \$11,233,033. Including one-time installation costs and twelve months of operating costs. The total cost of this type of system for the first year would be \$15,826,754.

Cost Item	One-Time Costs	Annual Operating Costs	TOTALS
311 Trunks	\$372,139	\$499,581	
ANI	\$320,115	\$57,693	
ALI and Selective Routing	\$1,224,882	\$1,364,059	
PSAP Equipment	\$2,676,586	\$133,750	
PSAP Staffing	\$0	\$9,175,950	
			\$11,233,033

- Existing number of 911 answering positions.
- Answering positions installed at the PSAs was assumed to be equal to the general government services will be accessible through 311 was also used.
- Due to the high 311 call volume that is anticipated, the number of 311 telephone lines for the agencies they serve. In addition, the assumption that not all of the PSAs currently answer the seven-digit non-emergency volume at the PSAs. This is due to the ease of use of 311, and due to the fact 311 call volume will be significantly higher than existing seven-digit call ANI/ALI is desirable.
- Selective routing is necessary.

The following assumptions were used in costing this model:

A. 311 Calls Answered at PSAs by Separate 311 Call Takers.

Although responding agencies did not indicate strong support for any of the 311 alternatives, for the purposes of this study, the Steering Committee selected the following assumptions were used in costing this model. This will allow the readers of this report to better assess the various cost/benefit relationships of two alternatives to be further defined so that cost estimates could be developed. This will also facilitate further development of the 311 system.

When technically feasible, should be provided on wireless 311 calls cellular phones should have access to 311, and that ANI and ALI, provided. Just over half of the respondents also indicated that defining the details of the top selected alternatives

One of the policy issues that must be discussed prior to the implementation of any 311 system in the region is whether the system should be implemented countywide, or whether individual jurisdictions could implement 311 within their service area only. As was stated earlier in this report, the FCC ruling does not establish any procedures for coordination between local government agencies, or between the telephone companies that would provide service to different types of services within a very confused local government. If 311 is to be considered for implementation either countywide or by an individual local government, it seems imperative that an agreement must first be reached countywide on which non-emergency services would be accessible through 311.

C.

Discusses 311 Implementation Regionally or by Individual Jurisdictions.

The installation of this type of system may increase the staffing needs at the agencies which the 311 calls would be transferred to. The cost of this staffing impact is not included in this cost estimate.

The quotes used in pricing this system were obtained from US West and GTE, and are based on existing 911 tariff rates, which may not be applicable for 311.

On-going annual operating costs after the first year would be \$1,921,333. Including one-time installation costs and twelve months of operating costs. The total cost of this type of system for the first year would be \$4,001,721,

Cost Item	One-Time Costs	Annual Operating Costs	TOTALS
311 Trunks	\$372,139	\$499,581	
ANI	\$320,115	\$57,693	
ALI and Selective Routing	\$1,224,882	\$1,364,059	
Automated Attendant	\$163,253	\$0	
			\$2,080,388
			\$1,921,333

The installation of this type of system would require the same components as the previously described system, without the addition of PSAP equipment and staff, and with the addition of an automated attendant system.

B.

311 Calls Answered by an Automated Answering System with Menu Driven Routing to the Appropriate Seven-Digit Telephone Numbers.

Seattle Police Department PSAP staffing costs, and applied to the number of calls or other equipment expansions. PSAP staffing cost estimates are based on the telephone equipment, but does not include the cost of Computer Aided Dispatch answering positions at each primary PSAP.

Assuming that agreement can be reached on which services would be accessed through 311, consideration could then be given to scenarios in which not all of the agencies in the county choose to implement 311. Implementation on less than a countywide basis would still have impacts on other agencies. A few scenarios are discussed below to demonstrate these.

One possible scenario would be for the City of Seattle to be the only entity to implement 311.

1. City of Seattle.

There are two approaches that could be used for routing the 311 calls, selective routing or default routing based on telephone company central offices. If central office routing is used, Seattle would receive 311 calls from citizens outside their jurisdiction. These calls would need to be transferred or referred to other numbers, thereby delaying service to these users, this scenario would be confusing and frustrating for citizens outside the City of Seattle. 311 callers using telephones outside the City would be greeted with a recorded announcement advising them that 311 service is not available in their area. This has the potential for increasing the number of calls to 911 when 311 is not available.

Public education regarding 311 utilizing the media would be problematic because the 311 message would reach the public not only in the rest of King County, but throughout western Washington as well. Public education could be conducted at the community level, although this would be challenging due to the large size of the City.

Due to the fact that unincorporated King County's jurisdiction is not consolidated, but interties between the cities, it would be very confusing to the public if King County was the only government to implement 311. Selective routing in this scenario would be required, because it would be virtually impossible to use default routing by central office boundaries. Public education would also be a sizable challenge, due to the dispersion of citizens over a wide geographic area.

2. Unincorporated King County.

Public education regarding 311 utilizing the media would be problematic because the 311 message would reach the media not only in the rest of King County, but throughout western Washington as well. Public education could be conducted at the community level, although this would be challenging due to the large size of the City.

Because the 311 message would reach the public not only in the rest of King County, but throughout western Washington as well, public education would be a sizable challenge, due to the dispersion of citizens over a wide geographic area. This has the potential for increasing the number of calls to 911 when 311 is not available.

Regardless of whether selective routing or central office default routing is used, this scenario would be confusing and frustrating for citizens outside the City of Seattle. 311 callers using telephones outside the City would be greeted with a recorded announcement advising them that 311 service is not available in their area. This has the potential for increasing the number of calls to 911 when 311 is not available.

Public's dissatisfaction in government services, and could force the other cities and the County to implement 311. It could also potentially increase the number of calls to 911 when 311 is not available.

Public education regarding 311 utilizing the media would be problematic because the 311 message would reach the public not only in the rest of King County, but throughout western Washington as well. Public education would be a sizable challenge, due to the dispersion of citizens over a wide geographic area.

Since the implementation of the 311 system, there has been a reduction in the 911 call volumes, but the overall call volumes of 911 and 311 combined is higher than the previous 911 volume. This scenario of not comparable to King County since the Baltimore Police Department did not have any seven-digit telephone numbers.

operational costs are not known. \$349,000. This cost does not include equipment or staffing costs, and ongoing utilization. AT&T has indicated that the initial set-up cost for the network was being selectively routed, and AT&T's Intelligent Call Processing Network is staffed with police officers who are on light duty or suspended. The 311 calls are 311 call answering positions have been established in the 911 PSAP, and these are 311 system provides access to non-emergency police services only. Nine separate 311 pilot projects. The system and advertising to the public on the use of the system were funded through grants from the U.S. Department of Justice and AT&T. This In October, 1996, the City of Baltimore implemented a 311 system as a two-year

A. City of Baltimore 311 Pilot Project.

The FCC reservation of 311 has generated interest in 311 throughout the nation. Several other communities are evaluating the feasibility of implementing 311 systems or are testing pilot system approaches. Some of these efforts are highlighted below.

VI. NATIONALWIDE 311 EFFORTS.

The use of selective routing would be required to restrict 311 service within the boundaries of a small city. Telephone company central office would not be advisable in this scenario. Again, the use of the media outside their jurisdiction. Again, the use of the media for public education routing was utilized, the city would receive 311 calls from many citizens feasible. jurisdictions, public education on a community level would be more

If any of the larger suburban cities other than the city of Seattle choose to implement 311, the installation of selective routing would be advisable. Due to the smaller size of these cities, it would be more difficult to restrict the service to citizens within the city boundaries using default routing. Public education would be challenging, because the use of the media would be problematic for the reasons already mentioned, and a large number of citizens would need to be reached at the community level.

4. Small Suburban City.

3. Large Suburban City.

The City of Phoenix has determined that their current system of 911 and seven-digit non-emergency numbers is working fine, and is not planning to implement

The City of Dallas is proceeding with the implementation of a 311 system to provide access to all non-emergency services, including general government, streets, and sanitation, have been combined into one call center. 311 and EMS non-emergency, public works, animal control, water utilities, code enforcement, fire, police, and EMS services. All city call taking and dispatch operations, including 911, police, fire, and EMS non-emergency services, will provide access to all non-emergency services, including general government, streets, and sanitation, have been combined into one call center. 311 answered at this consolidated center.

Both the states of Rhode Island and Oregon have enacted laws specifying that 911 will be the only 911 number allowed. Therefore, 311 could not be implemented in these states. It is unclear whether the FCC ruling preempts state legislation regarding 311.

The State of California is investigating the feasibility of 311, and is proceeding with the implementation of a pilot project in San Jose. Pacific Bell will use a DMS 100 switch to selectively route 311 calls to existing seven-digit numbers. There will be an automated attendant allowing the caller to route to services based on menu options. ANI and ALI will not be utilized. 311 calls from wireless cellular phones. The cost has been estimated at \$.34 per access line for one-time set-up costs, and \$.19 per access line per year in ongoing operational costs. As phones will be free, but a fee will be charged for calls made from coin phones or single city environment, and could not be applied to King County.

B. Other 311 Efforts.

It should be noted that the type of system that has been implemented in Baltimore is only applicable in a single city scenario, and could not be applied to King County's multi-jurisdictional environment.

The City of Baltimore has indicated that five other areas in Maryland are planning to implement 311 as well, and as a result, 80% of the state population would have access to 311 service.

Baltimore's 311 system receives approximately 1,700 calls per day, and 35 - 40% of these calls are emergency situations which require the dispatching of police officers. It has been discovered that if 311 calls are not answered within 17 seconds, the caller will usually hang up and dial 911.

which their citizens could call for non-emergency assistance prior to the implementation of 311. The public was encouraged to call 911 for any police matter.

advantage of a decision to proceed. Of this decision on surrounding jurisdictions should be addressed in a regional forum, in regarding the services which would be accessible through 311. In addition, the impacts implementation of a 311 system, they do so under some form of countywide agreement recommends that if any of these jurisdictions decide to proceed towards the was some interest indicated by individual agencies, and the 311 Steering Committee was some interest indicated by individual agencies, and the 311 Steering Committee departments, cities, or the PSAPs when these agencies were analyzed as groups. There implementation of any type of 311 system by the police departments, fire/EMS In addition, the survey results indicated that there was not strong interest in the

the use of seven-digit non-emergency numbers, works well today. Police and fire departments, and the PSAPs, that the existing E-911 system, along with manageable rate. These statistics are consistent with the assessment of the cities, the five years, and projections indicate that future 911 call volumes will grow at a indicates that the rate of change in 911 calls per person has been decreasing over the past seven-digit non-emergency numbers. In addition, an analysis of 911 call volumes inappropriate, and close to half of the total calls to the PSAPs are already received on the using the system. Overall, only 6% of the 911 calls received at our PSAPs are implemented in King County at this time. Research has shown that our E-911 system is not currently overburdened with non-emergency calls, and that the public is responsibly it is the recommendation of the 311 Steering Committee that a 311 system should not be

RECOMMENDATIONS

VII.

each one of these different approaches to handling non-emergency calls. Reporting Unit; and the Phoenix system of utilizing 911 and seven-digit non-emergency numbers. This will be an 18 month study to assess the effectiveness of services, with these calls being answered by the department's Telephone seven-digit non-emergency number will be published for non-emergency police Dallas 311 system; a trial at the Buffalo, New York, Police Department in which a The four approaches which will be evaluated are: Baltimore's 311 system; the four different alternative approaches to handling non-emergency calls for service. Office of Community Oriented Policing Services, has initiated a study to assess The National Institute of Justice, with support from the Department of Justice's details are currently available.

The City of Detroit has indicated that they are planning to implement 311, but no ability to fund the E-911 system upgrades necessary to accommodate wireless 911 311. They are concerned that the cost of 311 service could adversely impact their and number portability.

National Institute of Justice Assessment of 311

C.

The survey ratings and several comments indicated that public education efforts on the appropriate use of 911 and seven-digit non-emergency numbers should be increased, and expanded to a county-wide campaign, including the use of the media. In addition, the survey comments indicated that the listing of the seven-digit non-emergency numbers should be included on the front inside cover of all of the telephone directories and that more could be done to clarify the information presented on this page. The 311 Steering Committee recommends that efforts should be made to follow through on these recommendations.

The Steering Committee also recommends that the E-911 Program Office continue to monitor the 311 evaluations being conducted by others throughout the nation to determine their impact on the feasibility of a 311 system in King County. As vendors work to develop 311 technology and make this service available, it is also recommended that the E-911 Program Office monitor these services to determine their viability and report their findings on a periodic basis to the Regional Policy Committee.